Activities for Daily Living, Orientation and Mobility Techniques for Visually Impaired Students

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Abstract

A visually impaired student because of difficulty in imitation cannot perform the routine activities in a required manner. For this reason visually impaired students need to learn how to do their daily living activities. Daily living skills are those skills which enable us to carry out our day-to-day activities on our own. It is necessary for the visually impaired students to take education, training and practical session how he or she will cope up his daily activities and moving from one place to another place. However the present study has conducted to identify the ways of activities needed for leading daily living for Visually Impaired Students, to explore different Orientation and Mobility Techniques for Visually Impaired Students, to find out the different coping mechanism of Visually Impaired Students with environment and to assess the method of trainings for Visually Impaired Students. The study was conducted in Bangladesh. The study was documentary analysis type. Data and information were collected from secondary sources. From the study it was found that if visually impaired people are trained for Cooking skills, Teaching about Orientation, Development of Motor Skills, Teaching Mobility he or she can achieve the training and become able to do those things. If visually impaired students are trained with White Cane Techniques he or she can remarking the height, able for shorelining, can ascend stairs, can descend from stairs, can crossing the road, can ascend in bus or rickshaw, can Descend from Bus or Rickshaw, can Come and go with narrow space or door of a house, can sit in the bus or rest in the bus, can adopt warning. From the result it was also found that if the visually impaired students are trained with sighted guide, he or she can also do many works even can find out lost objects. Visually impaired students are able to move from one place to another place by the help of dog. Visually impaired students are able to use electronic devices if he or she trained. From the result it was also found that if the visually impaired students are trained properly they can become graduates, can get good jobs, and can works properly. Their contribution can add in our economy. So visually impaired students should provide more training and education facilities for the development of our country.

Key words: *Visually impaired students, White cane, White can technique, sighted guide, Training, Education, Electronic device.*

INTRODUCTION

Daily living skills are those skills which enable us to carry out our day-to-day activities on our own. A visually impaired child because of difficulty in imitation cannot perform the routine activities in a required manner. VIC is not mentally retarded but still he needs guidance in performing daily routine activities. This guidance can mean explaining him the correct order of doing things or holding things in a particular manner. Every child may not need the same type of training; it has to be individualized and need-based. The child who is visually impaired by birth may need more training as compared to the child who is adventitiously blind. Training helps the child socialize effectively in the society. The list of training activities can range from toilet training to preparation of a complete meal. It is important that visually impaired child masters as many skills of daily living as possible, because this will make him more independent and confident. When a person becomes blind, one basic limitation which arises out of blindness is ability to move independently and safely. If we think of child's early motor development also we would notice that a VIC considerably lags behind in motor movements. Activities like crawling, standing, sitting, walking are usually delayed in a VIC. Therefore, it is very important to develop O&M skills in every VIC right from the first year of his birth. Orientation means knowing about the environment in which a VIC lives. As there is distorted or no visual input a VIC has to be trained in various skills, using which he can collect the similar information which a sighted collects by other senses that is by listening, by touching, by smell or by using kinesthetic sense.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To identify the ways of activities needed for leading daily living for Visually Impaired Students.
2. To explore different Orientation and Mobility Techniques for Visually Impaired Students.
3. To find out the different coping mechanism of Visually Impaired Students with environment.
4. To assess the method of trainings for Visually Impaired Students.

METHODOLOGY OF THE STUDY

The study was conducted in Bangladesh. The study was documentary analysis type. Data and information were collected from secondary sources. Data were collected by using the comparison scale developed and standardized by the investigator. Data and information were collected from the secondary sources. Data and information were collected from Books, Research Report, Journals, Magazines, Periodicals, Websites of different Government and Non Government Organizations, Internet etc.

RESULTS AND DISCUSSION

1. Guidelines for Teaching ADL

- Select age appropriate activities. Observe the sighted child of the same age and then list out the activities for VIC.
- Break each activity into small steps. Help the child master the activity step-by-step.
- Work closely with the child's family. They must take a regular follow up of the activities which he has practiced.
- Remember child will master these activities by practice and not by lectures.
- Have a work plan which will guide you about the correct procedure and each step of a particular task.
- Gather the materials and equipments before starting the activity.
- After the activity is completed, make sure that the child cleans and returns all the equipments and materials to their correct storage space so that they can be easily located later.

2. Activities of ADL:

Self-help skills: Eating, brushing, dressing, bathing, toilet training, combing and washing hair, cutting nails, applying make-up, care and identification of clothes, taking care during menstruation, shaving

Home skills: sweeping and mopping the floor, dusting, washing utensils, washing-drying-folding- ironing clothes, sewing, polishing, money identification and management, feeding cattle, cutting grass, cleaning yard.

Cooking skills: Buying food-stuffs from the market, cleaning, peeling fruits and vegetables, correct storage of food-stuff, identification of fresh/ stale fruits and vegetables, lighting stove/ gas stove, cutting firewood and lighting chulha, preparing simple food, safe use of knives, measuring food items, cleaning and cooking fish / non vegetarian food.

3. Training Strategy

Before planning any activity for a visually impaired child try to understand in which area what adaptation is required and then design your programme accordingly.

- Observe a variety of daily living activities performed by sighted children of different age groups.
- Think about the areas where VIC may find it difficult to perform that activity.
- Adapt the procedure to suit the needs of VIC.
- Consider individual felt needs, physical potentials, age, and family background, past experience of the VIC.
- Always explain the VIC the procedure followed by sighted children while doing that activity.
- Stick to simple modifications for e.g. if you want to put ½ a teaspoon of salt he cannot see half of a regular spoon instead buy a set of measuring spoons for a VIC. This contains ¼ teaspoon, 1/2 teaspoon, ¾ teaspoon and 1 teaspoon. The VIC cannot see ½ but by selecting correct measuring spoon he can follow the same procedure.
- Ensure safety of the individual.
- Supervise the activity and give instructions wherever required.
- Do a regular follow-up of the activities and appreciate when the child masters that activity.

4. Teaching about Orientation

A sighted child gathers information about his environment mostly through vision. For a VIC a number of concepts have to be developed for effective use of environment during mobility. Sensory training is one of the essential areas where the child should be thoroughly trained. The VIC should have a correct body concept. The readiness activities for developing body concept can be:

- Identification of body parts. Simple e.g. Hand, leg, mouth, head etc.
- Identification of body parts. Complex e.g. Toe, fingers, uric, jaw etc.
- Identification of body planes e.g. Top, bottom, front, back.
- How to maintain correct posture and gait.
- Knowledge of directions in relation to body.

5. Development of Motor Skills

One more area which needs attention is motor development in a VI child. Our body is a collection of various Parts. Each part has a definite function. Each part consists of various units e.g. Muscles, bones, nerves. For functioning of parts different units work in coordination. The movement of these parts is called as motor. Motor skill development is the progression of understanding of the body and its parts as well as the control and ability to use the body to adapt to the demands of the environment.

Motor skills are divided into two:

1. Fine Motor Skills
2. Gross Motor Skills.

Activities of gross Motor Skills: sitting, standing, kneeling, squatting, jumping etc.

Activities related to fine motor movements: daily living activities, threading beads, reading, writing, buttoning, lacing shoes, threading needles, folding clothes, cutting vegetables.

Orientation: Orientation is the ability to locate oneself in one's environment. It is a skill that is related to the use of remaining senses of a person, to establish one's position in' and 'in relation' to significant objects in the environment.

What the teacher should aim at while teaching orientation:

1. Through the remaining senses collect as much information as possible.
2. To use auditory map, mobility map correctly and effectively.
3. To locate the permanent landmarks as well as temporary dues in the environment.

6. Teaching Mobility

Mobility is the ability to move from one place to other safely, independently and gracefully. When a VIC has correct orientation of his environment then the teacher can actually start teaching various mobility techniques to him. These techniques include.

1. White Cane Techniques
2. Sighted Guide Techniques
3. Walking Alone Without Cane or Sighted Guide Techniques
4. Dog Guide Techniques
5. Electronic Travel Aid

White Cane is a widely used accessory for the safe movement of visually impaired people. It extends from the ground to the middle of the person's chest. Generally, children under the age of 10-12 are discouraged from using white cane as they do not understand from the importance of using white cane.

1. White Cane Techniques

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1.1. Catching the White Cane:

During catching the white cane, the thumb should be placed just above the line index finger and perpendicular to the side of the body, and the other should be gripped with the fingers on the triangles body from below. In this way, the person using the white cane easily understand when the tip of his white cane is located and he will get an accurate idea about the road ahead.

1.2. Ways of keeping White Cane Keep in Within Body:

First the white cane should hold, the elbow should be slightly bent and kelp close to the body. The white cane is to be held along the center of the body. As a result, it will be possible to walk straight.

1.3 Using White Cane Wrist Will Move but Arm Will Not Move

During using the white cane, one has to move the wrist with a slightly greater radius from the shoulder and swing the white cane from left to right and then from right to left to hit the ground. This is called the "Two Point Touch Technique". In this rule, only the wrist will move but the arm will not move.

1.4 Touching Left and Right:

The white cane must touch the right side when the left foot is in front and the left side of the body when the right foot is in front.

1.5 Remarking the Height:

When walking, the tip of the white cane should touch the ground 1 meter in front of the body so that the movement of the visually impaired person is safe and the body tip should not be more than two inches above the ground.

1.6 Shorelining:

Following the road side, sidewalks, wall using white cane is called Shorelining. Shorelining can be done by touching the surface of the hand if possible while lining.

1.7 Ascending Stairs:

When climbing stairs, firstly one has to know about the place with the white cane. Then follow the railing of the ladder with one hand (if there is a railing) and with the other hand hold the steel slightly above the ground and hold it long along the lower side. When holding the white cane, the thumbs of the hand should be long at the back of the white cane and upper part of the body should be gripped with other four figures. Using the white cane in this way will tell if there are more stairs in front. If there are no railings on the stairs, you have to touch the walls, you have to follow the edge of the stairs as a guideline and go up the middle of the stairs.

1.8 Descending with Stairs:

During descending the stairs, the front of the white cane should be lowered a little and held long. In this case, both the railing and steel will help to determine if there are any more stairs steps in front. One hand follows the railing or the wall and the other hand holds the white cane at the front and descends.

1.9 Crossing the Road:

Before crossing the road, one has to make sure that the road is free of vehicles. The Two point Touch Technique must be followed during crossing the road and the other hand must be held high so that the driver can easily understand and exercise caution from a distance. However, for busy road crossing, it is better to take the help of a guide and in such a situation you have to cross the road by folding then white cane or holding it vertically with the body.

1.10 Ascending in Bus or Rickshaw:

During getting into the Bus, the white cane should be kept long or folded next to the seat so that there is no difficulty in closing the car door. After getting on the rickshaw, the white cane should be kept in a long position between the two legs so that the white cane does not collide with other vehicles.

1.11 Descending from Bus or Rickshaw:

During getting out from a Bus, rickshaws, etc., one should take the white cane in hand and first check the place to see if it is safe to get there. If it is seen that it is safe to get off the road then one has to get the bus, rickshaw etc.

1.12 After Ascending in Train or Bus:

During boarding a train or passenger bus or train, one needs to ask ones passengers about the destination of the bus or train and when to get off the bus. After getting on the train or bus using the white cane, one has to grab the bus steel and go inside. In this case the white cane should be held perpendicular to the body so that no other passenger is hit by the white cane.

1.13 Coming-Going with Narrow Space or Door of a House:

During walking through a narrow space or door of a house the white cane should be held diagonally slightly above the body. This is called Diagonal Technique. This technique is used when walking in any known or familiar area.

1.14 Sitting in the Bus or Resting in the Bus:

During sitting or resting, the white cane should be folded and placed long under the chair, or placed directly on one side of the door, or in a place where it can be easily found.

1.15 Adopt Warning:

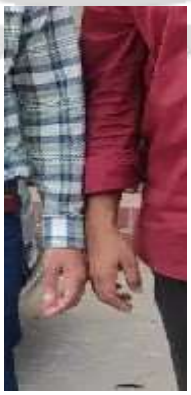
If anyone touches an object while moving with a white cane, he or she should try to find out about the object with the other hand or if there is a person nearby, he should ask about it and find out about the object. Otherwise, the person may stumble upon an unknown object and get injured.

2. Sighted Guided Techniques

Sight-guided strategies are generally considered to be the most effective way to move visually impaired people or students. In this way the visually impaired person has a power sighted person. As a result, both visually impaired and power vision people fall under the category of learning this technique. The power vision person needs to know how to guide the visually impaired person in movement. He needs to be alert, especially to narrow stairs and roadblocks. With the help of a visual guide, a visually impaired person can know what kind of obstacles are in his way and how to avoid them.

Some Basic Techniques in use Sighted Guide:
There are a number of strategies to be followed by both power sighted person and visual impaired person when navigating through the guided technique. Here are the key strategies-

2.1 Touch the Back of Hand:



At the beginning of the walk, the power sighted person has to touch the back of the blind person with the back of the hand. He can understand where his visual guide is.

2.2 Hand Take up to Shoulder of Sighted Guide:

After the first touch the visually impaired person has to slowly move his hand behind the guide person and hold it just above the elbow of his hand.

2.3 Catching on Elbow of Hand:

The follower has to go behind the power sighted person and hold him just above the elbow of his hand.

2.4 Catching Lightly:

The visual impaired person has to hold the hand of his visual guide very lightly.

2.5 Ready for Walking:

The visual impaired person should have his thumb on the outside of the guide's body or the rest of the fingers on the inside of the visual guide's arm. Thus one has to prepare for the walk.

2.6 Feeling the Movement of Guide:

When the guide starts moving, the visual impaired person can feel the movement of the guide through his hand.

2.7 Feeling the Movement of Sighted Guide:

The visual impaired person has to touch the elbow of the power sighted person very closely and always stay one step behind.

2.8 Adjustment of Left and Right

The combination of right and left is very important in terms of visual guide technique. That is, the visual impaired person has to stand to the left of the power sighted person and hold the power sighted person's left hand. Or, on the other hand, one has to hold the right hand of the person with the left hand while standing to his right. It will depend on which side the visually impaired person feels comfort and ease.

2.9 Catching on Shoulder:

If the visual guide in shorter than a visual impaired person, it is much more convenient to carry the shoulder than the elbow.

2.10 Catching in Wrist of Hand:

If the visual impaired person is short or a child and his guide is tall, it is easier to hold the guide's wrist.

2.11 Staying Back of Power Sight Person:

The visual impaired person has to stay behind the power sighted person while walking through the crowd and walk on the power sighted person. The distance between them will be one hand.

2.12 Ascending Stairs:

When climbing stairs, visually impaired person has to stay behind the power vision guid and climb up the stairs with one hand holding the power sighted person's hand and the other hand touching the railing of the stairs.

2.13 Descending Stairs:

During going down the stair's the visual impaired person have to stay behind the guide and go down the stairs with one hand holding the hand or shoulder of the power sighted person and the other hand touching the railing of the stairs.

2.14 Crossing the Road:

During crossing the road, power sighted person has to cross the road with the blind person very carefully. The visual impaired person's hand can be used occasionally so that from a distance the driver realizes that power sighted person is crossing the road with a visual impaired person.

2.15 Ascending in Bus or Rickshaw:

During riding in a car or rickshaw, one has to follow the rules of narrow roads and say that now it is better that the power sighted guide will get down from first then the visually impaired people will to get down from a car or a rickshaw.

2.16 Descending from Bus or Rickshaw:

During getting down of a car or a rickshaw, that the power sighted guide will get down first then the visually impaired people will to get down from a car or a rickshaw.

2.17 Ascending in Train or Bus:

During getting on a train or bus, you have to get up very carefully and keep a white cane with you so that other passengers realize that he is visual impaired. It is better to get into the visual impaired person on the train or bus and then the power sighted person will get into the bus or train.

2.18 Descending from Train or Bus:

During getting down of a train or bus, you have to get out very carefully and keep a white cane with you so that other passengers realize that he is visual impaired. It is that the power sighted guide will get down from first then the visually impaired people will to get down from a bus or train.

2.19 Going with Narrow Place or Home door:

The power sighted person has to be warned in advance while walking on the narrow road and the hand of the visually impaired person has to be moved backwards. As a result, visually impaired person started walking behind the power sighted person.

2.20Touch on the Chair and Staying on the Chair by Sighted Guide Technique

During sitting in a chair, one has to go in front of the chair and touch the visual impaired person with your hands.

3. Walking Alone Without White Cane and Sighted Guided Techniques:

People with visual impairments usually use trailing and self-defense techniques to walk safely alone in their familiar areas without a guided guide or white cane. But keep in mind that it is safe to use such tactics only in unfamiliar places. Trailing and Self Defense Techniques should never be resorted to in unfamiliar places. Walk in unfamiliar places with the help of a power sighted person or with the help of white cane.

3.1 Trailing
3.2 Defense Technique
3.1 Trailing:

Trailing is the use of the surface of any hand to follow the edge of a wall table or any other object. When using the trailing technique, the person extends his hand a little (at this point the person's arm will be 45 angles away from the body) and keep the fingers slightly bent inwards so that no uneven object can hit the finger.

3.2 Defense Technique:

3.2.1 Upper Hand and Forearm

3.2.2 Lower Hand and Forearm
3.2.3 Locating Last Objects

3.2.1 Upper Hand and Forearm:

People with visual impairments can use upper hand and forearm techniques to protect their upper body (head, face and chest) from being hit by hanging objects, such as tree stalks, open doors and windows. When using this technique, the visually impaired person will raise his left or right hand shoulder to shoulder at an angle of 120 degrees to the elbow. When using this technique, the visually impaired person will raise his left or right hand shoulder to shoulder at an angle of 120 degrees to the elbow. If the palm of the hand does not move forward from the elbow, the elbow may be injured by an unknown object.

3.2.2 Lower Hand and Forearm:

People with visual impairments can use lower hand and four arm techniques to protect the lower part of the body from chair-table or furniture injuries. The visually impaired person should bring his left or right body along the middle and extend it towards the front. In this position the fingers of his hand should be straight towards the ground and the palm of the hand should be turned towards the body. When using this technique, the hand must be extended 10 to 20 cm in front of the body.

3.2.3 Locating Lost Object:

The following are the steps to follow to find the fallen thing-

- If the objects fall from the hand, the sound of the object falling should be noticed and the work should be stopped immediately.
- One has to follow the source of the sound and should move the direction of the sound.
- One has to stop the place where the last sound was.
- Upper hand and forearm and lower hand and forearm techniques should be followed by kneeling or bending the knee.

There are two ways of find the fallen thing:

I. Circular or Round Method:

The person will look for the object falling in a round or circular pattern over the entire area in front of him or the palm of both hands and gradually reduce the circumference of the circle.

II. Braille Method:

The visually impaired person will find out the object or thing by keeping his two hands on the floor by following the rules of Braille fallen technique. If the object is not found in the front, then the person will search left-right, back in the same manner, then move forward or backward to find the object in the same manner.

4. Dog Guide Techniques:

Dog guide strategy refers to the technique of moving a dog as a guide for a visually impaired person. According to White Stock, the systematic training of dog guides for the visually impaired began in the eighteenth century. The first Dog Guide School was established in Germany during World War I. Nashville Dog Side School was founded in 1929 in Nashville, USA. The school was later relocated to Morristown, New Jersey.

Strategies for Using the Dog Guide:

- The dog's rope is usually held in the left hand and holds the stick in the right hand.
- The dog is trained in such a way that the dog stops when the neck chain is pulled and starts moving as soon as the chain is shaken.
- The signals given by the dog have to understand by the visual impaired person. For example, if the dog stops at the entrance, if there is any obstacle, the dog passes him and turns around.
- Usually the dog walks before the person. But there will be time to get off the bus,
- The person must have full control over the dog. Since the dog is not capable of many tasks, such as understanding the type of vehicle, how fast it will arrive, etc.

- Understand that, the guide dog is just an ordinary animal, so you shouldn't expect anything amazing or surprising from it.

5. Electronic Travel Aid:

Among the materials used in the movement of visual impaired people, comparatively modern equipment is the electronic auxiliary device. Some of these models are mentioned below-

5.1 The Lindsay Russel Model E Pathsounder
5.2 The Mowat Sensor
5.3 The Sonic Guide
5.4 The c-5 Laser Cane

5.1 The Lindsay Russel Model E Pathsounder:

A Pathsounder is a box-shaped device that acts as a barrier to sound. The instrument was invented by Lindsay Russell in 1975 as the second accessory after the white or long stick. Pathsounder informs the user about obstacles in the way of sound waves emitted and received. This device weighs about 16 ounces as high as the chest. It can be hung around the neck by ribbon. Since this device is a very common impairment diagnostic device, it is suitable for people with visual impairments with human problems.

5.2 The Mowat Sensor:

As a complement to the white long cane and dog guide method used in mobility, New Zealand's G.C. Moat invented the 'Moat sensor' device. This device helps to identify any sign, specific and familiar object or special mark on the way in front of the disabled person, any large object like long piece of wood or stick or pedestrian. The device is portable. It measures 6 inches × 2 inches × 1 inch and weighs slightly more than 8 ounces. It is run by hand. Its scope is fixed such as near range is 1 meter and distance limit is 4 meters. It notifies the user that the entire device vibrates when it detects an object on the road.

5.3 The Sonic Guide:

Sonic Side's full name is "By Normal Sensory Aid". The device was invented by Leslie K in 1966.It is also driven by waves like Pathsonders and moat sensors. This device receives sound waves and converts them into sound signals.

The Sonic Guide is a bit different from the Pathsounder and Moat sensor because it is used for both obstruction detection and environmental sensing at the same time.

The sonic guide device is not convenient to use for small children. The following two instruments were later invented for them.

- The Infant Sonic Guide
- The Canterbury Children's Aid

5.4 The c-5 Laser Cane:

The c-5 laser cane was invented by J. Melavarn Benjamin. It is a variant of the white cane; weight 16 oz. such canes is powered by rechargeable batteries. Different parts of it participate in different activities.

- The upper bouts featured two cut ways, for easier access to the higher frets.
- The anterior part identifies the obstruction of the person's waist.
- The lower part identifies the obstruction in the ground.

CONCLUSION AND RECOMMENDATION

From the study it can be concluded that if visually impaired people are trained for cooking skills, teaching about orientation, development of motor skills, teaching mobility he or she can achieve the training and become able to do those things. If visually impaired students are trained with white cane techniques he or she can remarking the height, able for shorelining, can ascend stairs, can descend from stairs, can crossing the road, can ascend in bus or rickshaw, can descend from bus or rickshaw, can come and go with narrow space or door of a house, can sit in the bus or rest in the bus, can adopt warning. So government should provide more training and facilities for the visually impaired students and people. From the result it was also found that if the visually impaired students are trained with sighted guide, he or she can also do many works even can find out lost objects. So there should have provisions to engage more sighted guide for visually impaired students and people. Visually impaired students are able to move from one place to another place by the help of dog. Visually impaired students are able to use electronic devices if he or she trained. From the result it was also found that if the visually impaired students are trained properly they can become graduates, can get good jobs, can works properly. Their contribution can add in our economy. So visually impaired students should provide more training and education facilities for the development of our country.

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